

IN THE CLAIMS

1. (canceled)

2. (currently amended): ~~The facsimile communication system according to claim 1;~~

A facsimile communication system comprising:

a facsimile device on a sender side;

a gateway device on a sender side connectable through a telephone line to said facsimile device;

a gateway device on a receiver side connectable to said gateway device on the sender side through a communication line to which a protocol being different from that applied to said telephone line is applied;

a facsimile device on a receiver side connectable to said gateway device on the receiver side through the telephone line to which the same protocol as applied to said telephone line is applied; and

whereby said gateway device on the receiver side is provided with memory, to store data transferred from said gateway device on the sender side, used when said data is transmitted from said facsimile device on the sender side through both said gateway devices to said facsimile device on the receiver side, a monitoring circuit to monitor accumulated amounts of said data to be stored in said memory and an accumulated data amount calculating circuit operated to store, in said memory, amounts of data required to prevent communication failures between said gateway device on the receiver side and said facsimile device on the receiver side even when delays in communications develop prior to the start of transmission of said data from said gateway device on the receiver side to said facsimile device on the receiver side and operated to calculate said required amounts of data, and said gateway device on the receiver side is operated to start the transmission of said data to said facsimile device on the receiver side when said accumulated amounts of data to be monitored by said accumulated amount data calculating circuit exceed said required amounts of data;

wherein said gateway device on the receiver side calculates delays in communications in said communication line for every communication prior to the receipt of said data from said gateway device on the sender side and, when said gateway device on the receiver side judges that said communication failures may occur due to said calculated delays in communications, stores said required amounts of data in said memory based on said calculated delays in communications.

3. (original): The facsimile communication system according to claim 2, wherein said delays in communications are calculated from expected delayed time data.

4. (original): The facsimile communication system according to claim 2, wherein said gateway device on the receiver side judges, for every communication, whether said communication failures may occur or not based on not only said delays in communications but also a transmission rate in communications between said gateway device on the receiver side and said facsimile device on the receiver side.

5-19. (canceled)

20. (currently amended): ~~The facsimile communication system according to claim 17,~~
A facsimile communication system comprising:
a facsimile device on a sender side;
a gateway device on a sender side connectable through a telephone line to said facsimile device;
a gateway device on a receiver side connectable to said gateway device on the sender side through a communication line to which a protocol being different from that applied to said telephone line is applied;
a facsimile device on the receiver side connectable to said gateway device on the receiver side through the telephone line to which the same protocol as applied to said telephone line is

applied and, after receiving all the data to be sent from said facsimile device on the sender side for every communication through said gateway device on the sender side and said gateway device on the receiver side, operated to return a receiving confirming signal showing completion of the receipt to said facsimile device on the sender side through said gateway on the receiver side and said gateway device on the sender side, and

whereby said gateway device on the sender side, after receiving said all data to be sent to said facsimile device on the receiver side from said facsimile device on the sender side and before receiving said receiving confirming signal from said facsimile device on the receiver side, sends a disconnection instructing signal instructing the disconnection of communications between said facsimile device on the sender side and said gateway device on the sender side to said facsimile device on the sender side;

wherein said receiving confirming signal is a first message confirmation function signal and wherein said gateway device on the sender side is provided with a first notifying section operated to send a second message confirmation function signal to said facsimile device on the sender side when, before said gateway device on the sender side receives said first message confirmation function signal from said facsimile device on the receiver side through said gateway device on the receiver side, said gateway device on the sender side receives an end-of-file signal, which show that the transmission of all the data from said facsimile device on the sender side to said gateway device on the sender side has been completed, by predetermined number of times from said facsimile device on the sender side;

wherein said facsimile device on the sender side is provided with a notifying section operated to send, when receiving said second message confirmation function signal, a first discontinue communication notification signal being the discontinue communication notification signal used to notify the termination of communications between gateway device on the sender side and facsimile device on the sender side containing additional information, to said gateway device on the sender side;

wherein said facsimile device on the sender side is provided with a valid period setting section operated to set a valid period when said facsimile device on the sender side is able to

receive the [[NSS]] non-standard function setting signal containing information showing that said gateway device on the sender side has received said first [[MCF]] message confirmation function signal and wherein said facsimile device on the sender side, when receiving said second [[MCF]] message confirmation function signal, sends said first [[DCN]] discontinue communication notification signal with additional information added, to said gateway device on the sender side so that said gateway device on the sender side sends said [[NSS]] non-standard function setting signal within said valid period to said facsimile device on the sender side.

21. (original): The facsimile communication system according to claim 20, wherein said additional information is the information about said valid period.

22. (currently amended): The facsimile communication system according to claim 20, wherein said gateway device on the sender side is provided with a second notifying section and wherein said gateway device on the sender side, after receiving said first [[DCN]] discontinue communication notification signal together with said additional information, sends a second [[DCN]] discontinue communication notification signal used to terminate communications between said gateway device on the receiver side and said facsimile device on the receiver side to said facsimile device on the receiver side through said gateway device on the receiver side and then makes a call to said facsimile device on the sender side and, after having made the call, by using said second notifying section, sends said [[NSS]] non-standard function setting signal to said facsimile device on the sender side.

23. (new): A facsimile communication system comprising:

a first facsimile device on a sender side;

a first gateway device on the sender side connectable through a first telephone line to the first facsimile device;

a second gateway device on a receiver side connectable to the first gateway device through a communication line to which a protocol different from that applied to the first telephone line is applied;

a second facsimile device on the receiver side connectable to the second gateway device on the receiver side through a second telephone line to which the same protocol as is applied to the first telephone line is applied;

a picture data accumulating memory comprised in the second gateway device; and

circuitry sending picture data from the picture data accumulating memory to the second facsimile device only after a preset interval of time, the preset interval of time being less than a communication failure time interval at which communication among the gateway devices and the facsimile devices is interrupted by at least one of those devices, due to a communication delay in the communication line.

24. (new): The facsimile communication system according to claim 23, wherein the circuitry sending picture data comprises

an accumulated data amount monitoring circuit;

an accumulated data amount calculating circuit; and

a timer.

[2] 25. (new): The facsimile communication system according to claim 23, wherein the circuitry calculates the communication delays in the communication line for every communication prior to the receipt of data from the first gateway device and, when said second gateway device judges that said communication failures may occur due to the calculated

communication delays, stores required amounts of data in the accumulating memory based on the calculated communication delays.

[3] 26. (new): The facsimile communication system according to claim 25, wherein the communication delays are calculated from expected delayed time data.

[4] 27. (new): The facsimile communication system according to claim 25, wherein the second gateway device judges, for every communication, whether communication failures may occur or not based on not only the communication delays but also a transmission rate in communications between the second gateway device and the second facsimile device.

[5] 28. (new): The facsimile communication system according to claim 23, wherein the second gateway device, when a time elapsed after the second facsimile device has completed a preparation for the receipt of data exceeds a predetermined threshold time being shorter than a threshold time for a communication breakdown set to communications between the second gateway device and the second facsimile device, regardless of whether the accumulation of required amounts of data in the memory is completed or not, transfers the data stored in the memory in consecutive order to the second facsimile device in order to prevent any breakdown of communications between the gateway device on the receiver and the second facsimile device.

[6] 29. (new): The facsimile communication system according to claim 23, wherein the picture data is compressed picture data.

[7] 30. (new): The facsimile communication system according to claim 23, wherein the second gateway device, when receiving a digital communication signal showing a communication mode from the first facsimile device through the first gateway device, transfers the digital communication signal to the second facsimile device and, before receiving a confirmation of facsimile receipt signal showing a confirmation of the completion of receiving

preparation from the second facsimile device which has responded to the digital communication signal, returns another confirmation of facsimile receipt signal used to receive the data from the first facsimile device through the first gateway device to the first facsimile device.

[8] 31. (new): The facsimile communication system according to claim 23, wherein the second gateway device, when receiving a digital communication signal showing a communication mode from the first facsimile device through the first gateway device, transfers the digital communication signal to the second facsimile device and then sends a training check function signal used to check a receiving capability of the second facsimile device to the second facsimile device and, after completion of the transmission of the training check function signal, sends a new training check function signal to the second facsimile device before the time elapsed after the second facsimile device has completed a preparation for receiving data exceeds the predetermined threshold time being shorter than a threshold time for a communication breakdown set to communications between the second gateway device and the second facsimile device, in order to prevent the breakdown of communications between the second gateway device and the second facsimile device during the accumulation of the required amounts of data.

[9] 32. (new): The facsimile communication system according to claim 23, wherein, after receiving all the data to be sent from the first facsimile device for every communication through the first gateway device and the second gateway device, operated to return a receiving confirming signal showing completion of the receipt to the first facsimile device through the gateway on the receiver side and the first gateway device, and

whereby the first gateway device, after receiving all the data to be sent to the second facsimile device from the first facsimile device and before receiving the receiving confirming signal from the second facsimile device, sends a disconnection instructing signal instructing the disconnection of communications between the first facsimile device and the first gateway device to the first facsimile device.

[10] 33. (new): The facsimile communication system according to claim 32, wherein the first facsimile device, when receiving the disconnection instructing signal, sends a communication ending signal showing a termination of communications to the first gateway device and wherein the first gateway device, when receiving the communication ending signal from the first facsimile device, makes a transmission of the communication ending signal to the second facsimile device pending and, when receiving the receiving confirming signal from the second facsimile device, sends the communication ending signal to the second facsimile device through the second gateway device.

[11] 34. (new): The facsimile communication system according to claim 32, wherein the picture data is compressed picture data.

[12] 35. (new): The facsimile communication system according to claim 32, wherein the receiving confirming signal is a first message confirmation signal and wherein the first gateway device is provided with a first notifying section operated to send a second message confirmation signal to the first facsimile device when, before the first gateway device receives the first message confirmation signal from the second facsimile device through the second gateway device, the first gateway device receives an end of file signal, which show that the transmission of all the data from the first facsimile device to the first gateway device has been completed, by a predetermined number of times from the first facsimile device.

[13] 36. (new): The facsimile communication system according to claim 35, wherein the second message confirmation signal contains the disconnection instructing signal instructing the disconnection of communications between the first facsimile device and the first gateway device as additional information.

[14] 37. (new): The facsimile communication system according to claim 35, wherein the first gateway device is provided with a second notifying section operated to send a non-standard

function signal showing that the first gateway device has a capability of sending the second message confirmation signal to the first facsimile device prior to the receipt of the data from the first facsimile device.

[15] 38. (new): The facsimile communication system according to claim 37, wherein the first facsimile device is provided with a notifying section operated to send, when receiving the NSF signal, a non-standard function setting signal showing that the first facsimile device has a capability of receiving the second message confirmation signal.

[16] 39 (new): The facsimile communication system according to claim 35, wherein the first facsimile device, when receiving the second message confirmation signal, sends the discontinue communication notification signal being the communication ending signal to the first gateway device to terminate communications and wherein the first gateway device, when receiving the first message confirmation signal after having received the discontinue communication notification signal, sends the discontinue communication notification signal to the second facsimile device through the second gateway device.

[17] 40. (new): The facsimile communication system according to claim 35, wherein the first facsimile device is provided with a notifying section operated to send, when receiving the second message confirmation signal, a first discontinue communication notification signal being the discontinue communication notification signal used to notify the termination of communications between first gateway device and first facsimile device containing additional information, to the first gateway device.

[18] 41. (new): The facsimile communication system according to claim 40, wherein the additional information contained in the first discontinue communication notification signal includes information as to whether the second facsimile device requests that the signal being a confirmation notifying signal containing the information as to whether the first gateway device

has received the first message confirmation signal after the first gateway device has disconnected communications between the first gateway device and the first facsimile device be returned to the second facsimile device.

[19] 42. (new): The facsimile communication system according to claim 40, wherein the first gateway device is provided with a second notifying section operated to send the non-standard function setting signal containing information as to whether the first gateway device has received the first message confirmation signal to the first facsimile device after the disconnection of communications between the first gateway device and the first facsimile device based on the first discontinue communication notification signal and wherein the first gateway device, after receiving the first discontinue communication notification signal, sends a second discontinue communication notification signal used to terminate communications between the second gateway device and the second facsimile device to the second facsimile device through the second gateway device and then makes a call to the first facsimile device and, after having made the call, sends the non-standard function setting signal to the first facsimile device.

[20] 43. (new): The facsimile communication system according to claim 40, wherein the first facsimile device is provided with a valid period setting section operated to set a valid period when the first facsimile device is able to receive the non-standard function setting signal containing information showing that the first gateway device has received the first message confirmation signal and wherein the first facsimile device, when receiving the second message confirmation signal, sends the first discontinue communication notification signal with additional information added, to the first gateway device so that the first gateway device sends the non-standard function setting signal within the valid period to the first facsimile device.

[21] 44. (new): The facsimile communication system according to claim 43, wherein the additional information is the information about the valid period.

[22] 45. (new): The facsimile communication system according to claim 43, wherein the first gateway device is provided with a second notifying section and wherein the first gateway device, after receiving the first discontinue communication notification signal together with the additional information, sends a second discontinue communication notification signal used to terminate communications between the second gateway device and the second facsimile device to the second facsimile device through the second gateway device and then makes a call to the first facsimile device and, after having made the call, by using the second notifying section, sends the non-standard function setting signal to the first facsimile device.